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THE CHANGING ATTITUDE OF FARMERS TO FOREST IN NINETEENTH CENTURY ONTARIO

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At the beginning of the nineteenth century most of southern Ontario was covered with dense forest. Most settlement took place in the the forest, and so a major theme in the development of the area, as also in much of northeastern North America, is the confrontation between the agricultural settler and the forest. The concern here is with one aspect of this confrontation: the attitude of settlers or farmers to the forest. The prevailing attitude for most of the nineteenth century was one of hostility to forest. However, during the last quarter of the century farmers' feelings about trees changed. As they discovered, and experienced the results of deforestation, they came to value trees and began replanting on a significant scale.

THE EARLY SETTLERS' HOSTILITY TO THE FOREST

The early settlers' attitude to forest was one of antagonism. Farm and forest were seen as entirely incompatible. In their evaluation, the advantages of living in a forested setting were totally outweighed by the disadvantages. Consequently, settlers stripped the trees from their land as quickly as possible, shrinking only from burning them as they stood. They attacked the forest with a savagery greater than that justified by the need to clear the land for cultivation, for the forest smothered, threatened, and oppressed them. Several British travellers noted this attitude, recording the settlers' exultation on seeing a forest giant crash to the ground and contrasting this with *their own feeling of sorrow (Fergusson, 127). – not in biblio.

The settler viewed the forest essentially as an obstacle to development. It stood between him and the establishment of his farm. Even when he had laboriously cleared a piece of land, he had not yet won it from the forest. The stumps of many hardwoods continued to sprout, and forest plants invaded his fields. Samuel Thompson, farming in Simcoe County, noted that on hardwood land, clearing and burning were followed by a growth of wild lettuce or fireweed (Thompson, 75). This also was the experience of the first colonist on newly cleared land around Peterborough, where, "if a piece of land lies untilled the first summer after its being chopped, the following spring shows you a smothering crop of this vile weed" (Traill, 74). Mid-nineteenth century American botanists identified the fireweed as *Erechthites hieracifolia*, "remarkable for its prevalence on newly cleared grounds – especially in and around the spots where brush-wood has been burnt" (Darlington , 192). According to Thompson, dense thickets of cherry trees succeeded the fireweed on hardwood lands. This cherry was the native *Prunus serotina*, the fruit of which was a "favourite food of birds" (Darlington, 119). Indeed, Thompson associated its ubiquity on his land with the large colony of pigeons which nested nearby. Thompson recorded that the clearing of pines resulted in a rapid and thick growth of raspberries, followed by aspen poplars (Thompson, 75-76). The raspberry, to which Traill also refers, was *Rubus strigosus* which appeared throughout the north east United States "in great profusion where timber lands have been burnt over" (Darlington, 126). These, and doubtless other, successions and invaders characterised abandoned lands and threatened the settler's fields (Strachan, 77; Shirreff, 101).

Forest wild life also posed problems to farmers. Even in well settled areas the remaining patches of forest harboured vermin of various kinds, especially birds "which destroy the fruit of the orchards, and devour the grain as soon as sown" (Strachan, 76; Thompson, 75; Abbott, 41).

Although, mature cattle were in little danger from predators, settlers believed that smaller livestock were seriously menaced: poultry by minx, marten, fox and racoon, and sheep and hogs by wolves and bears. Martin Doyle advised farmers in newly settled districts to pen their sheep at night for protection against wolves. But he believed this precaution to be unnecessary elsewhere, for "in general the Canadian wolves are not ferocious in disposition – they avoid mankind" (and hence the older settlements) (Doyle, 34). However, William Dunlop's views probably found wider support. To Dunlop the wolf was "a very mischevious beast of prey", and the bear

negative + neutral views of wolves

a ruthless and relentless killer (Dunlop, 43 and 41). The fact is that sheltered wild life, which threatened both crops and livestock, further accentuated the settlers' conception of the forest as an obstacle to progress. Moreover, the popular image of lurking large predators significantly added to the feeling of unease experienced by settlers living in the forest.

Most immigrants from Europe felt uncomfortable in Ontario's forest. In part this was because those who had given the matter any thought at all had envisioned the forest as a romanticised version of English woodland. They had imagined clearings, patches of sunlight, and towering and spreading forest giants. In their mind's eye they had carpeted the forest floor with flowers and populated the trees with songbirds. But this image was totally incorrect, as new arrivals rapidly discovered. Catherine Parr Traill, for example, confessed great disappointment with the Ontario forest, "having pictured to myself hoary giants almost primeval with the country itself, exceeding in majesty the form of the trees of my native isles" (Traill, 86-87). Instead she found "a want of picturesque beauty in the woods". She continued:

> There is no appearance of venerable antiquity in the Canadian woods. There are no ancient spreading oaks that might be called the patriarchs of the forest. A premature decay seems to be their doom. They are uprooted by the storm, and sink in their first maturity, to give place to a new generation that is ready to fill their places.

plains

Only on the plains lands (around Rice Lake, just west of Brantford, and Norfolk County) where the tree cover thinned out, did British settlers find the landscape aesthetically pleasing. Oaks and pines, growing singly or in groves, were scattered over the surface, giving it a park-like appearnace which "rivalled any garden in beauty" (Traill, 50 Shirreff, 160).

Most settlers coming from Europe, and indeed many from the old settlements of eastern North America, brought with them no romantic preconceptions but, nevertheless, were shocked by the forest. There were very few published descriptions of the forest or of the smothering feeling experienced by living in it. Thus, later settlers were as poorly prepared for the reality of the situation as were the first. They discovered the forest to be a depressing and totally unfamiliar setting. They found themselves in "a perpetual gloom of vaulted boughs and intermingled shade, a solemn twilight monotony" (Thompson, 47). They felt smothered in this twilight world, insulated from familiar sights, sounds and experiences. Even the wind could scarcely be flet. Above all, settlers felt weighted down by the "unnatural and oppressive silence." of the forest (Thompson, 47). Mrs. Traill related her feelings walking *along a road* through the forest just a few miles north of Peterborough as follows (Traill, 86):

> We soon lost sight entirely of the river, and struck (along the road) into the deep solitude of the forest, where not a sound disturbed the almost awful stillness that reigned around us. Scarcely a leaf or bough was in motion, except at intervals we caught the sound of the breeze stirring the lofty heads of the pine trees, and wakening a hoarse and mournful cadence. This was the tapping of . . . woodpeckers on the trunks of the decaying trees, or the shrill whistling cries of the . . . chipmunk (sic), was every sound that broke the stillness of the wild.

Would-be farmers, then, saw the forest as an impediment, as a barrier to progress. They did recognize that it also offered support for agricultural settlement, and there is some point in outlining this dimension of the settlers' evaluation of their environment. However, it must be remembered that in their judgement this support was too slight and temporary to justify the preservation of any area of forest or to soften their antagonism towards trees.

For newly arrived settlers hunting and fishing were important sources of food (Dunlop, 32; Doyle, 35). Hunting required little skill. Partridges, for example, were "so tame as to be easily killed" and in April pigeons appeared in such large flocks that even the worst shot could bring some down (Doyle, 36). The poorer British immigrants, especially, relished their freedom to hunt and fish, for these activities were strictly regulated in their homeland.

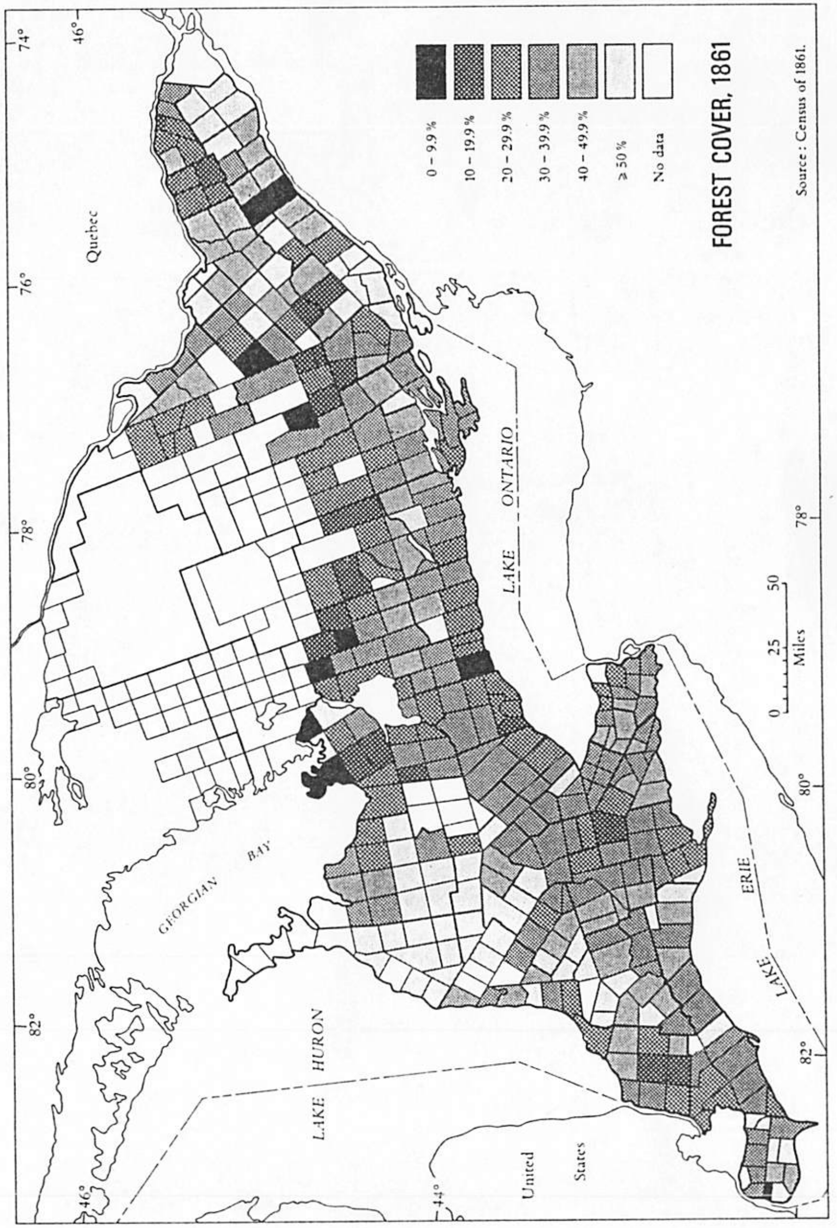
The settlers guides to Ontario publicised those parts of the eastern North America folk lore which had developed out of the need for cheap medicines and for substitutes for hard-to-get or high priced foods and beverages. They printed lengthy listings of useful forest plants (Anonymous, 75-78). However, most of Ontario's settlers were so anxious to clear land rapidly that they took advantage of very few of these possibilities, aside from gathering fruits and tapping the sugar maple.

But they did depend heavily on the forest as a source of feed for their livestock. Initially most farm animals were of low quality, and their most outstanding characteristic was their ability to survive even flourish by foraging for themselves in the woods (Pickering, 45-46; Doyle, 34-35; Evans, 91; Fergusson, 367). The few early mixed farmers also used the wild hay of the beaver meadows and marshes (Chesshyre, 41, Kelly 1973, 208).

Finally, settlers found in the forest the materials to build and furnish their houses, to construct their barns and sheds, to fence their fields, to bridge ravines and streams, and to build the causeways which carried roads across swamps. The forest constituted an apparently endless source of fuel. And some settlers were able to supplement their incomes through the sale of timber, fuel wood, and ashes produced on their own lands.

Settlers regarded many of the supports offered by the forest as of value only over the short term. As the farms were developed, game and food from wild vegetation would become less important in the settlers' diet, and livestock would be fed increasingly (and with better results) on cultivated crops and sown pastures. A few British travellers warned that a later generation of farmers would "find out the inconvenience of the general destruction of timber" (Strachan, 76). But such comments demonstrate the gulf which separated travellers from settlers, and the inability of the one to comprehend the attitude of the other. Settlers could imagine, and look forward to, the day when they had removed all the trees from their own land and when they therefore would become dependent on off the farm sources for fuel and building materials. But they could not conveive of the deforestation of the entire district in which they lived, let alone of most of southern Ontario.

The clearing of the forest progressed rapidly. By 1861 a massive area had lost sixty per cent or more of its forest cover (see Fig. 1). The



FOREST COVER, 1861

Source : Census of 1861.

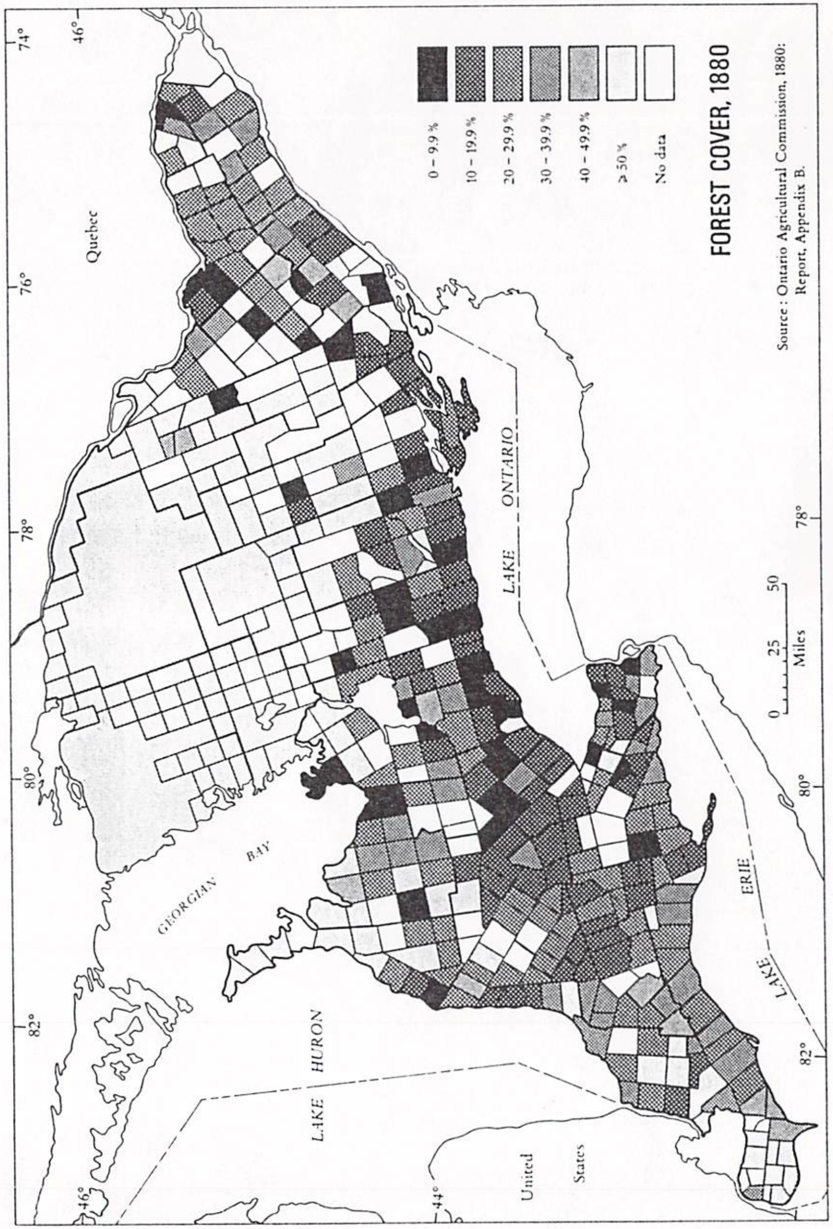
Figure 1

heavy clearing along the Ottawa valley and the edge of the Shield can be ascribed to lumbermen. But that along the fronts of Lakes Ontario and Erie primarily represented the efforts of agricultural settlers. According to the late nineteenth century literature, a township with less than twenty percent of its land in forest was overcleared. Most agricultural townships still had, in 1861, more forest than this. But clearing in them was concentrated on two broad site types: the uplands under beech, maple and hemlock, and the richer lands under a cover of mixed hardwoods (Kelly, 1970). Since farmers lacked the capital to drain them, most of the wet and swamp lands still remained in forest. Thus, while many of the farms were rapidly being stripped bare, most townships still had over twenty percent of their land in forest. However, by 1880 not only had a large arealost most of its forest cover, but also many of the agricultural townships had been overcleared (see Fig. 2). Shortages of building timber and fuel had forced farmers to cut in the swamps, substantial areas of wet land had been cleared and drained, and the broadening railway network had permitted the exploitation of virtually all the pine stands of southern Ontario.

Types of sites cleared

THE GROWTH OF AWARENESS OF THE ADVERSE EFFECTS OF OVERCLEARANCE AND THE EMERGENCE OF A NEW ATTITUDE TO FORESTS

In clearing the land, in letting his livestock feed in the woods, and in taking timber for fuel and construction, the farmer modified his physical setting. He had, of course, planned to change it in one important respect, to remove competitors for light and nutrients. And he believed that the removal of the forest might "improve" the climate. But he was unprepared for the rapidity of the disappearance of the forest and for the consequences which followed. However, as the forest disappeared, the farmer learned something about the influence of the forest on the climate near the ground, on the run-off percolation ratio, and on soil erosion. He also began to discuss, incorrectly as it happens, the effects of forest on rainfall. He became aware of the effect of livestock browsing on the forest, and of the



Source: Ontario Agricultural Commission, 1880: Report, Appendix B.

Figure 2

likely economic impact of the local exhaustion of fuel wood and building lumber. His understanding of these things developed during the last quarter of the nineteenth century, together with the realisation that the land had been overcleared. With these discoveries came the beginning of a new farmer attitude to the forest.

In the early 1860's the Board of Agriculture of Upper Canada and the *Canadian Agriculturalist* published a series of articles on the dangers of overclearance and identified browsing as an agent of forest destruction. But these articles discussed only a few of the effects of deforestation, and almost all were reprints from American journals. It was not until the early 1870s that a general farmer awareness of the results of overclearance began to emerge in Ontario.

William Mundie, had forecast that a shortage of fuel and building lumber would inevitably follow the increase in demand which began during the 1850s with railway construction and the spurt of urban growth (Mundie, 13). Few farmers in the early 1860s when Mundie's essay was published, could envisage a fuel or building timber shortage. By the 1880s, however, the prospects of such a shortage were more real. "There is no doubt that we will soon feel the want of firewood, as also of lumber for building pruposes", noted one farmer (Forestry Report 1884, 19); and his warning was echoed by many. Some observers reported that a shortage already existed. For example, a Simcoe County farmer wrote in 1884 that "the hardwood is being rapidly cleared away, so that many farmers find themselves already without firewood for their own use . . . the principal part of the forest left is composed of low lying or swampy land. Timber for building purposes is scarce and hemlock is taking the place of pine where practicable" (Forestry Report 1884, 23). The Forest Report for 1886 presented an inventory of the supply of fuel wood in Ontario. It revealed that if farmers continued to allow their livestock to browse in the woodlands, most of southern Ontario would have no fuel left in a few years (Forestry Report 1886, 7-15). According to the calculations of the raporteurs for York County, when the fuel wood in southern Ontario was exhausted it would be necessary to import eight million dollars worth of coal each year. But the value of crops taken from the lands formerly in woods would not even approach this figure (Forestry Report 1886, 15). The prospect of a shortage of wood for fuel and construction continued to haunt observers throughout the remainder of the nineteenth century.

During the last quarter of the nineteenth century farmers recognised many consequences of the loss of shelter, but were most concerned about the effect on fall wheat production. Now the wind blew the protective snow cover from the fields so that, commonly, the fall wheat was killed in late winter or early spring as alternate freezing and thawing heaved the young plants out of the soil (Forestry Report 1891, 3). An article published in the *Farmer's Advocate* lamented that "every year is an additional lesson in the injury done to our fall wheat, much of which would no doubt have been prevented, were we so provident as to leave standing timber for shelter (*Farmer's Advocate* 1874, 30). Indeed, many farmers considered lack of shelter to be the cause of Ontario's decline as a wheat producer. Robert Purves, a farmer of Kinloss township (Bruce County), for example, was aware of the argument that "the reason we do not raise as much (fall wheat) per acre now as when the country was new is that our lands are becoming poor". But in his opinion, "such is not the case in many instances, as the new land we clear now will not yield the same per acre as when the country had more shelter" (Forestry Report 1884, 22). York County farmers agreed with Purves, concluding as follows (Forestry Report 1886, 15-16):

> If there is anything well proved by repeated testimony in America, it is that when the woods are nearly or quite gone, the farms do not yield the good return to the husbandmen as when much remained in forest. It cannot be too impressively stated that this is not due to exhaustion of land by overcropping, for neither will bush land yield nearly as well when first cropped, as its adjoining bush land at the former period.

The literature also contains observations by farmers on the winter kill of grasses and clovers and of wind damage to orchard fruits caused by the lack of shelter (Forestry Reports 1884, 55; 1891, 3).

Farmers found that increased domestic heating costs and a greater difficulty of winter transportation resulted from the lack of shelter which came with deforestation. The Forestry Report for 1884 commented on the need for a larger supply of fuel to keep the house warm (Forestry Report 1884, 7). And indeed freezing temperatures inside the house were now frequent where formerly, when there was more sheltering woodland, they had been uncommon (Lussier, 39). Furthermore, winter travel became more difficult during the last three decades of the nineteenth century: snow drifts blocked the roads now that the sheltering trees were gone (*Orillia Packet* 1871; Beall, 37).

Ontario farmers were concerned also about the effects of lack of shelter during summer. They were aware of the sufferings of livestock deprived of shade and, most keenly, of the accentuation of drought conditions. Lussier commented on the "frequency of unseasonable and prolonged drought after large scale clearance (Lussier, 39), while Beall observed that now farmers were liable to summer droughts lasting two or three weeks (Beall, 37). According to some observers, the removal of the trees had adversely affected the distribution and amount of rainfall. For example, farmers in Markham township agreed "that the rainfall is much more variable and distributed in a manner less useful to the farmer than when larger forests existed through the land" (Forestry Reports 1886, 17; 1884, 19-31). The belief that the presence of trees, particularly on heights of land, significantly increased rainfall – although incorrect – was stated repeatedly in the literature promoting reforestation. However, more perceptive observers like Beall had no doubt that prolonged droughts were not a function of diminished summer rainfall, but rather of a change in the run-off: percolation ratio and of the wind blowing across the land without meeting any obstruction. In Beall's words, after clearing, the winds came "sweeping along the parched earth for miles without any obstruction, the relative humidity of the air at such times being often below thirty percent, thus adding materially to the increasing aridity of the soil" (Beall, 36),

Beall was not alone in observing that a change in the run-off: percolation ratio followed large scale clearing. It frequently was commented on during the last quarter of the nineteenth century, particularly in discussions of fluctuations in river and stream flow. Reporting in 1881, the Ontario Agricultural Commissioners considered it "a matter of common knowledge that our streams diminish as the woodlands are cleared away". They declared that deforestation had adversely affected water-powered industries, caused water supply problems in the cities and larger towns, and reduced navigable rivers to mere trickles (Ontario Agricultural Commission I, 155). Other writers noted the corollary that at times the rivers were in flood to levels previously unknown. "Heavy floods in the spring season, or after violent rainstorms, have often caused serious injury, carrying off in a few days the volume of water which would formerly have flowed off gradually and without injury" (Forestry Report 1891, 3). The casual relationship between the removal of the forest and fluctuations in river flow was established as more and more writers recognised significant changes in the run-off: percolation ratio. James Johnstone of Carrick township (Bruce County) expressed this recognition well when, after stating that he had observed no change in rainfall, he continued as follows (Forestry Report 1884, 19):

> But there is quite a change in the manner of it (rainwater) getting into creeks and rivers. Formerly when this county was covered with forests, the rain very gradually soaked its way into the ground and thus slowly raised the springs, creeks, and rivers. Now, after rain, the creeks receive it much sooner, as a great deal of water does not penetrate the soil at all, but flows over the surface and gets at once into the creeks, and raises them sometimes very suddenly . . . And for the same reason we have more floods and also more times of low water.

Knowledge of the increase in the amount of run-off as opposed to percolation allowed a number of farmers to relate the soil erosion now visible on their land to deforestation. Based on farmer's comments, the Forestry Reports generalised that wherever too much forest was cleared "the falling water and melting snow rushes rapidly across the land to the rivers carrying away much good soil" (Forestry Report 1886, 75). They recognised landslips, gully development, the choking of river beds, the covering of once fertile bottom lands with coarse debris, and occasionally the growth of swamps as results of accelerated erosion (Forestry Reports 1885, 138; 1893, 6 and 11). The Forestry Report for 1886 drew attention to soil erosion in the older settled areas, remarking that "what is especially noticeable in

Ontario because our forests near the front have been largely cleared, is the quantity of valuable and fertile soil washed away into the streams (Forestry Report 1886, 49). Thomas Beall, describing the Oak Ridges area, made virtually the same observation. Large scale clearing – coupled with the practice of ploughing down the slope – increased and channelised run-off, which carried with it "large quantities of the best of the soil" (Beall, 37). However, soil erosion was not confined to the older settled areas. For example a group of farmers in St. Vincent township (Grey County) complained of "the loss of fertile soil through washing, owing to the mistaken clearing of the summits of the hills" (Forestry Report 1886, 27).

In the eys of late nineteenth century observers all of the problems described above were clearly caused by deforestation. With the advantage of hind sight they condemned the earlier generations which had ripped away the forest. They believed that the solutions to these problems lay in replacing the trees. Farm and forest no longer were seen as mutually exclusive. Successful agriculture required, at the farm level, windbreaks and woodlots; and, at the regional level, forests to provide shelter and to regulate water supply. Finally, at a still broader level, the well being of the province called for substantial forest preserves to provide fuel and timber for the urban centres and to protect the headwaters of the major river systems. The attitude to forests had changed from the desire to erradicate them entirely to one of restoring and preserving them over large areas of the province.

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